

CLAIMS:

1. A method of making a stabilized hydrogen peroxide composition comprising about 2% wt.% or less of hydrogen peroxide based on the total weight of the composition which is suitable for application to human skin, the method comprising:

adding to water about 0.05 to about 0.5 wt.% of polycarboxylic acid having a chain length of 2 to 6 carbon atoms, a tin salt in an amount of about 0.005 to about 0.05 wt.% based on weight of tin, about 0.02 to about 0.5 wt.% of salicylic acid or a salt of salicylic acid, and about 1 to about 35 wt.% of at least one monoglyceride of a fatty acid having a carbon chain length of 12 to 16, in crystalline form to form a solution, wherein all wt. % are based on the total weight of the composition;

heating said solution to a temperature sufficient to melt said crystalline monoglyceride;

cooling said solution at a controlled rate to form crystals; and

adjusting the pH to about 3.5 to about 4.9.

2. A method according to claim 1, wherein said solution is heated to a temperature of about 70°C to dissolve said crystalline monoglyceride.
3. A method according to claim 1, wherein said solution is cooled at a rate of about 0.1 to about 10°C per minute.

4. A method according to claim 3, wherein said solution is cooled at a fixed rate.
5. A method according to claim 1, wherein said polycarboxylic acid is added in amount of about 0.1 to about 0.3 wt.%; said tin salt is added in an amount of about 0.01 to about 0.03 wt.% by based on the weight of tin; and said salicylic acid is added in an amount of about 0.05 to about 0.2 wt.%.
6. A method according to claim 1, wherein said pH is adjusted to be from about 4.75 to about 4.9.
7. A method according to claim 1, wherein said crystalline monoglyceride comprises 1-Glycerolmonolaurate, C12, and 1-Glycerolmonomyristate, C14.
8. A method according to claim 7, wherein the amount of and the ratio between C12 and C14 are varied depending on desired viscosity of the composition.
9. A method according to claim 7, wherein the ratio C12 : C14 is from 1:3 to 1:1 for a cream product and from 1:3 to 1:0 for a lotion or spray form product with lower viscosity.

10. A method according to claim 1, wherein the amount of crystalline monoglycerides is from about 15 to about 35 wt.% when a cream product is desired.

5 11. A method according to claim 1, wherein the amount of crystalline monoglycerides from about 1 to about 15 wt.% when a lotion or spray product is desired.

10 12. A method according to claim 1, wherein said polycarboxylic acid comprises oxalic acid.

15 13. A method according to claim 1, further comprising adding a buffer to said solution.

20 14. A method according to claim 13, wherein said buffer comprises at least one selected from the group consisting of phosphate buffers and citrate buffers.

25 15. A method according to claim 1, further comprising adding a stabilizer comprising at least one selected from the group consisting of pyrophosphate and sequestrants.

16. A method according to claim 15, wherein said stabilizer comprises EDTA or phosphonic acid.

17. A method according to claim 1, further comprising adding a physical stabilisers against sedimentation of the lipids.
18. A method according to claim 17, wherein said physical stabilizer comprises a polar surfactant having an HLB over 20.
19. A method according to claim 17, wherein said physical stabilizer comprises a thickener.
20. A method according to claim 19, wherein said thickener comprises a polyacrylic acid derivatives.
21. A method according to claim 1, further comprising adding a dermatological agent.
22. A method according to claim 21, wherein said dermatological agent comprises glycerol or propyleneglycol.
23. A method according to claim 1, wherein said composition retains a hydrogen peroxide efficacy of at least 90% after 2 years.
24. A method according to claim 1, wherein said crystalline monoglyceride has a carbon chain length of from about 10 to about 14.

25. A method of making a stabilized hydrogen peroxide composition comprising about 2% wt.% or less of hydrogen peroxide based on the total weight of the composition which is suitable for application to human skin, the method comprising:

adding to water a polycarboxylic acid having a chain length of 2 to 6 carbon atoms, a tin salt, salicylic acid or a salt of salicylic acid, and at least one monoglyceride of a fatty acid in crystalline form to form a mixture;

heating said solution to a temperature sufficient to melt said crystalline monoglyceride;

cooling said solution at a controlled rate to form crystals; and

adjusting the pH to about 3.5 to about 4.9.

26. A pharmaceutical, hydrogen peroxide composition which is suitable for application to human skin comprising:

about 2 wt.% or less of hydrogen peroxide;

about 0.05 to about 0.5 wt.% of polycarboxylic acid having a chain length of 2 to 6 carbon atoms;

a tin salt in an amount of about 0.005 to about 0.05 wt/% based on weight of tin;

about 0.02 to about 0.5 wt.% of salicylic acid or a salt of salicylic acid;

about 1 to about 35 wt.% of at least one monoglyceride of a fatty acid in crystalline form to form a mixture; and

balance water, wherein said composition has a pH of about 3.5 to about 4.9, and wherein all wt.% are based on the total weight of the composition.

- 5            27.    A composition according to claim 26, wherein said polycarboxylic acid is present in amount of about 0.1 to about 0.3 wt.%; said tin salt is present in an amount of about 0.01 to about 0.03 wt.% based on the weight of tin; and said salicylic acid is present in an amount of about 0.05 to about 0.2 wt.%.  
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28.    A composition according to claim 26, wherein said pH is from about 4.5 to about 4.9.
- 15           29.    A composition according to claim 26, wherein said crystalline monoglyceride comprises 1-Glycerolmonolaurate, C12, and 1-Glycerolmonomyristate, C14.
30.    A composition according to claim 29, wherein the amount of and the ratio between C12 and C14 depends on desired viscosity of the composition.  
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31.    A composition according to claim 29, wherein the ratio C12 : C14 is from 1:3 to 1:1 for a cream product and from 1:3 to 1:0 for a lotion or spray form product with lower viscosity.

32. A composition according to claim 26, wherein the amount of crystalline monoglycerides is from about 15 to about 35 wt. %.

33. A composition according to claim 26, wherein the amount of crystalline monoglycerides from about 1 to about 15 wt. %.

34. A composition according to claim 26, wherein said polycarboxylic acid comprises oxalic acid.

35. A composition according to claim 26, further comprising a buffer.

36. A composition according to claim 35, wherein said buffer comprises at least one selected from the group consisting of phosphate buffers and citrate buffers.

37. A composition according to claim 26, further comprising a stabilizer comprising at least one selected from the group consisting of pyrophosphate and sequestrants

38. A composition according to claim 37, wherein said stabilizer comprises EDTA or phosphonic acid.

39. A composition according to claim 26, further comprising a physical stabilizers against sedimentation of the lipids.

40. A composition according to claim 39, wherein said physical stabilizer comprises a polar surfactant having an HLB over 20.
41. A composition according to claim 39, wherein said physical stabilizer comprises a thickener.
42. A composition according to claim 41, wherein said thickener comprises a polyacrylic acid derivatives.
43. A composition according to claim 26, further comprising a dermatological agent.
44. A composition according to claim 43, wherein said dermatological agent comprises glycerol or propyleneglycol.
45. A composition according to claim 26, wherein said composition retains a hydrogen peroxide efficacy of at least 90% after 2 years.
46. A composition according to claim 26, wherein said crystalline monoglyceride has a carbon chain length of from about 12 to about 16.
47. A pharmaceutical, hydrogen peroxide composition which is suitable for application to human skin comprising:  
about 2 wt.% or less of hydrogen peroxide;



a polycarboxylic acid having a chain length of 2 to 6 carbon atoms;

a tin salt;

salicylic acid or a salt of salicylic acid;

5 at least one monoglyceride of a fatty acid in crystalline form to form a mixture; and

balance water, wherein said composition has a pH of about 3.5 to about 4.9, and wherein all wt.% are based on the total weight of the composition.